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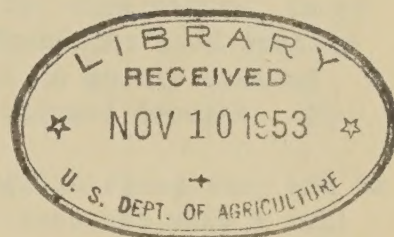
PLANT INDUSTRY.

UNITED STATES DEPARTMENT OF AGRICULTURE,

U. S. Bureau of Plant Industry,
New and Rare Seed Distribution //

Washington, D. C. //

GRASS MIXTURE FOR HAY AND PASTURE.



Object of the Distribution.

The distribution of new and rare seeds has for its object the dissemination of new and rare crops, improved strains of staple crops, and high-grade seed of crops new to sections where the data of the department indicate such crops to be of considerable promise. Each package contains a sufficient quantity for a preliminary trial, and where it is at all practicable the recipient is urged to use the seed for the production of stocks for future plantings. It is believed that if this practice is followed consistently it will result in a material improvement in the crops of the country. Please make a full report on the inclosed blank regarding the results you obtain with the seed.

In sections where timothy and clover cannot be successfully grown, orchard grass, tall meadow oat-grass, redtop and the rye grasses must in general be depended upon to take the place of this combination. A mixture of these grasses almost invariably gives better results than any of the species individually. The best combination of these species in a mixture is dependent to a considerable extent on the type of soil for which the mixture is intended; however, in a general way, a mixture containing all of the grasses with some alsike and red clover has given satisfactory results on practically every type of soil as far south of the timothy region as the lower end of the Piedmont.

A mixture of these species, aside from furnishing satisfactory yields of good quality hay, also furnishes good pasturage. Orchard grass and tall meadow oat-grass are excellent for early and late grazing, and the other species furnish grazing to a considerable extent during the mid-summer season. The following is a brief description of the grasses and clovers composing this mixture:

ORCHARD GRASS.--Orchard grass is a hardy perennial with upright stems and abundant leaves. It does not form a close sod, but grows in bunches, and is somewhat inclined to be coarse. It starts growth early in the spring, and is able to grow until late in the fall. One of its most important characteristics is its adaptability to a large variety of soils, and its ability to produce good yields of forage on soils of comparatively low fertility.

TALL MEADOW OAT-GRASS.--This grass is sometimes called tall oat-grass, oat-grass, or evergreen grass. It is a hardy perennial, producing an upright growth of from 15 to 30 inches, with abundance of leaves. It is not a turf-forming grass, but is somewhat bunchy in habit. It produces seed in an open head, or panicle, somewhat similar to cultivated oats, the seed however being much smaller and chaffier than oats. Tall meadow oat-grass is adapted to various types of soil, and is capable of producing very satisfactory yields for forage on soils of low fertility. The chief objection to it is that it is somewhat unpalatable as hay unless cut at the proper stage of maturity.

REDTOP.--This grass is also called herd's-grass in some parts of the South. It is a perennial grass with slender, smooth stems, 1 to 2 feet high, and creeping root-stocks. It is a turf-forming species, somewhat similar in this respect to Kentucky bluegrass. The seed is borne in an open head, or panicle, which, when mature, is of a reddish brown color; hence, the name "redtop." This grass furnishes good grazing on soils of reasonably poor fertility, and is very well adapted to poorly drained soils. It is a hardy species, enduring conditions of severe cold and drought. In many cases it can be used to advantage as a soil-binder.

PERENNIAL RYE-GRASS.--This grass is sometimes known as English rye-grass, and is a quick-growing, short-lived perennial species. Ordinarily it does not make a tall growth, but produces an abundance of leaves, which are about the color of those of bluegrass, but much more shiny in appearance. It makes a quick growth, and adds materially to the value of a mixture which includes orchard grass and tall meadow oat-grass in that it furnishes a so called bottom growth which materially increases the yield of the mixture. It is not exacting in its soil requirements, but is especially adapted to sandy lands.

ITALIAN RYE-GRASS.--Italian rye-grass is very similar in appearance to perennial rye-grass, but is an annual species which produces a quick growth of very palatable forage. Like perennial rye-grass it is well adapted to sandy lands. The seed is similar to that of the perennial species with the exception that each individual seed is tipped with a short bristle or awn.

ALSIKE CLOVER.--This is a perennial clover and in general intermediate in size and appearance between the common red clover and white clover. The leafy branches, while not as coarse as those of red clover, commonly reach the height of 18 inches, and even more on moist rich soils. The blossoms resemble those of the white clover more closely than those of the red clover, being of a light pinkish color. Alsike clover has a wider range of adaption than red clover, and is especially one of the best perennial hay plants available for poorly drained soils.

RED CLOVER.--Red clover is a short-lived perennial rarely lasting more than two years, although stands of it may be maintained by allowing the plants to set seed. There are two common varieties--ordinary or medium, and mammoth. The latter is sometimes known as Sapling, Giant, Pea Vine, or Soiling clover. Mammoth clover is larger and coarser than the medium and matures from 2 to 3 weeks later. The medium variety is the one most commonly used.

Seeding.

This mixture can be seeded to best advantage early in the fall, during the latter part of August or the first of September. Later seeding than this is apt to result in a failure of the clovers, due to winterkilling. Seeding is recommended without a nurse crop, and if the grass gets a reasonably good start in the fall, it will make a crop of hay the following spring. Thirty pounds of mixed seed per acre is recommended, and, since the various seeds are of different size and shape, the stirring of the mixture at frequent intervals in the seeder is advisable in order to promote even distribution.

The chief objection to spring seeding lies in the fact that the growth of weeds is frequently so rank that it materially interferes with the grasses. On land that is reasonably free from weeds, spring seeding commonly gives very good results.

An important point in getting a satisfactory stand of this mixture is to have the ground well plowed, and the subsurface thoroughly settled. The surface layer of

soils should be fine and loose in order to facilitate an even covering. After sowing, the seed should be covered very lightly by an ordinary drax harrow, or preferably a weeder if the latter is available.

If intended for hay, the grasses should be cut about the time the orchard grass and tall meadow oat-grass begin to bloom. At this stage they appear to make hay of greater feeding value and palatability than if cut at an earlier or later stage. After one or two crops of hay have been cut from the mixture, it is frequently advisable to utilize the land for pasture, since the yield of hay falls off after the second or third season.

This grass mixture is especially valuable for ridding land of weeds, notably such weeds as white-top and oxeye daisy. Since the grasses are cut for hay before the weeds have had time to mature, a meadow of this mixture will after a few years' cutting become remarkably clean.

R. A. Oakley,

February 1, 1915.

Agronomist in Charge.

